Sustainable Canadian Agricultural Partnership

Agricultural Stewardship Initiative
Basic Energy Use Assessment (Level 1) – Minimum Requirements

A Basic Energy Use Assessment (Level 1) is a preliminary evaluation of a whole farm operation's energy performance, focusing on identifying potential areas for improvement and identifying opportunities for energy savings, ultimately providing an overview of a farm operation's energy-related strengths and weaknesses. Energy assessments can range from basic evaluations to more detailed analyses (that could include direct electrical and thermal energy monitoring, thermal imaging, etc.) depending on the scope and objectives outlined by the farm operator/owner.

The Basic Energy Use Assessment (Level 1) must be conducted by a qualified third-party consultant/engineer/energy auditor. Components of a Basic Energy Assessment (Level 1) must include but are not limited to:

- A detailed description of the farm operations, its primary commodities and size of operation (e.g., number of livestock, number of acres/hectares farmed, etc.).
- A detailed description of all the buildings being considered in the energy assessment, which includes building use, type of building construction, size, insulation type, details of the heating, cooling and ventilation systems, and major equipment (fans, pumps, lighting, etc.).
- Annual production metrics of the primary commodities (e.g., hL of milk produced, number of livestock sold or live weight sold, weight of crop sold per cycle).
- Scope and objectives of the analysis
- Description of how the assessment is conducted
- An overview of the whole farm operation's current energy use and performance (baseline):
    - Review of at least 12 months of utility bills to understand current consumption of electricity, natural gas, diesel, propane and other energy sources;
    - Includes walkthrough of whole farm operation looking for energy sources and technologies, buildings infrastructure, ventilation, energy-consuming devices, machinery and appliances
- Summary of the raw data considered for establishing current baseline energy use and potential energy savings
    - Key Performance Indicators (KPIs) are reported for the farm operation, and all calculations and assumptions are described. KPIs can include energy use per production unit (e.g., kWh per volume of milk produced, kWh per weight of crop, kWh per live weight of livestock), energy use per building area, and energy use per head of livestock or per unit of crop.
- Outline of assumptions considered for the analysis
- General observations and initial recommendations for enhancing energy savings opportunities related to the various main activities of the farm operation, including:

    - Identify quick wins – where energy-savings can be more easily achieved with simple retrofits or replacements of equipment/technology options, and changes in practices, timing and scheduling, maintenance and repair;
    - Some technical data analysis quantifying potential energy savings with proposed changes;
    - Higher-cost areas requiring further assessment or investigation
- High-level plan that sets long- and short-term goals and next steps for enhancing energy savings at the farm operation

A final copy of the Basic Energy Use Assessment (Level 1) report must be submitted to the farm owner/operator at the completion of the assessment. A walkthrough of the final report should also be presented to the farm owner/operator to ensure there is a full understanding of the energy use assessment and its findings.